

Comparative Efficacy of Electrosurgery with Topical 50% Trichloroacetic Acid in Treatment of Warts

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Introduction: *Verruca vulgaris* is the common benign proliferation of the skin that is encountered in dermatological practice caused by Human Papilloma Virus. The clinical management of verruca vulgaris is often challenging. Multiple modalities of treatment currently exist, but none of them is singularly effective. **Aim:** This study was designed to compare the therapeutic response of warts to trichloroacetic acid versus electrosurgery. **Design of the study:** This is a randomized double blind prospective study. **Materials and methods:** The study was carried out for 12 months and it included 60 patients. Patients with genital warts, immune compromised patients, pregnant and lactating mothers are excluded in the study. **Statistical Analysis used:** chi square test. **Results:** Electrosurgery was used in 30 patients with complete clearance in 27 cases. 50% TCA was used in 30 cases with complete clearance in 7 patients. **Conclusions:** Electrosurgery treatment in warts is the best treatment when compared to 50% Trichloroacetic acid.

Keywords: verruca vulgaris; Electrosurgery; 50% Trichloroacetic acid (TCA)

1. Introduction

Warts or verrucae are caused by human papillomavirus, belonging to the family Papoviridae. Various morphological patterns known as verruca vulgaris (common warts), verruca plana (plane warts or flat warts), plantar warts, filiform warts, digitate warts and anogenitalwarts (condyloma acuminata) occur. This infection can cause physical and emotional distress in patients. A variety of therapeutic modalities are available, but to date no single therapy has proven uniformly successful. Recurrence rates for therapies are relatively high.¹

Electrosurgery is a common mode of treatment and it involves the principle of tissue destruction by heat.² But this method has the disadvantage of causing pain, scarring, respiratory papillomatosis in the operator and high recurrence rate.³

In this study, an alternative mode of therapy with topical 50% trichloroacetic acid was evaluated. Trichloroacetic acid is a caustic and hemostatic agent. A saturated solution could be used alone for the treatment of many benign and dysplastic skin lesions. A solution of TCA is applied topically and must be allowed to dry until a white frosting develops and its application is accompanied by a burning sensation that lasts for two to five minutes.⁴

We undertook this study to compare the efficacy of topical 50% TCA and Electrosurgery.

2. Materials and Methods

Study Design: Prospective randomized double blind study 60 consecutive patients with warts attending department of dermatology and venereology were subjects for the study. Sixty patients were randomly selected by envelope method. Study was done over a period of one year.

Inclusion Criteria: Patients presenting with all morphological types of warts irrespective of age, sex and duration were included in the study.

Exclusion Criteria: Patients with genital warts, immune-compromised patients, pregnancy and lactating women were excluded from the study.

A detailed history regarding the age, sex, occupation, duration of disease, family history of disease was obtained. A thorough dermatological examination was done taking care to note morphology and distribution of warts. All cases were diagnosed by paring. Written consent was obtained from all the patients.

The two modalities tried are:

- Electrosurgery
- 50% TCA

(a) Electrosurgery

Prior to the electrosurgery, the procedure was explained to the patient in detail to remove apprehension. The procedure was carried out in Minor-OT with adequate lighting. The operator and assistant wore mask to prevent exposure to smoke born microbes. Preparatory to electrosurgery, the lesion and surrounding skin was cleaned with povidine-iodine. Alcohol was not used because of the potential for alcohol to ignite with electrosurgery. 1% lidocaine with epinephrine was used for local anaesthesia. The procedure was undertaken with the patient in lying down position. After removal of the wart, the base was again cauterized until bleeding stopped completely. The wound was dressed with sterile gauze. Follow-up was done every month for 6 months.

(b) 50% TCA

The reagent was applied carefully avoiding normal skin using a sharpened matchstick biweekly and the patient was

trained thus to do it at home. The lesions were treated for a period of six weeks or till the disappearance of the lesions whichever is earlier. After the disappearance of the lesions, the patient was followed up every month for a period of 6 months.

The results were assessed as follows: "Complete clearance" is defined as total clearance of warts, with no evidence of residual warts. "Partial clearance" is defined as improvement in the number and or size of warts, but without complete eradication of warts. "No improvement" is defined as warts in which there is no reduction in number or size or worsened with treatment. All patients were followed-up monthly for a period of 6 months. Reappearance of warts, at the sites of earlier lesions during followup was considered as "Recurrence".

Statistical Analysis Used: Chi Square test

3. Results

Out of 60 patients included in the study, 39 were males ; 21 were females. Most of the patients were between 16 to 30 years, accounting for 58% cases. 40% of the patients were students by occupation. Nearly half of the patients (45%) had disease duration of 1 to 6 months. The most common affected site was hands (32%), followed by feet (30%) and face (26%). Verruca vulgaris was the most common morphological pattern seen (42%), followed by plantar warts (30%), plane warts (20%) ; anogenital warts (4%) ; filiform warts (4%).

In electro-surgery group of 28 patients (93%) had "complete clearance". Two patients had "recurrence" as shown in [fig – 1] and [Table-1]. In 50% TCA group of 7 patients had "complete clearance". Three patients had "recurrence". In 18 patients there was "no improvement" and 2 had "partial clearance" as shown in [Table-2] and [fig – 2].

As per the statistical analysis electro-surgery treatment is superior to the 50% trichloroacetic acid ($P < 0.001$)

4. Discussion

In the present study 60 cases of verruca were evaluated for comparative efficacy of topical 50% TCA solution against conventional electro-surgical method.

Electrosurgery:

In the present study out of 30 patients subjected for electro-surgery there was "complete cure" in 28 patients (93%) and in 2 patients there was "recurrence".

Chang et al.⁵ in their study of 302 patients with warts, 11 patients were treated with electro-cautery. Eight patients had complete clearance (72.2%). As compared to above study, in the present study shows higher rate of complete clearance. This could be attributed to more numbers of patients in the present study.

Alexander Berman.⁶ used electro-surgery for 2 patients with flat warts found "complete clearance" in both patients. The above study had no recurrence in comparison to present study; this could be attributed to less number of patients in the above study.

Topical 50% TCA:

In the present study, out of 30 patients in which 50% TCA was utilized, there was complete clearance in only 7 patients. In 18 patients (60%) and there was no response, 2 (66.66%) patient had partial clearance and in 3 patients (10%) there was recurrence.

Pezeshkpooret al.⁷ in his study used different concentration of TCA (80% and 35%) in 62 patients and showed complete clearance to TCA 80% in 14 patients (46.7%) and TCA 35% in 3 patients (12%). The above study showed more complete response to high concentration of TCA in comparison to present study which showed poor response to TCA.

5. Conclusion

Warts or verrucae are one of the commonest conditions in dermatological practice. Though spontaneous cure is known in warts it is not possible to wait for the same. Though there are many modalities of treatment there is no specific treatment because the selection of modality of treatment depends on the size, location, type of lesions, chances of side effects and patient's willingness to treatment. In view of the absence of a universally specific treatment many modalities of therapy exist and many remedies are added frequently. In the present study concluded that electro-surgery scored over the TCA 50% method for the treatment of warts, as there was significant decrease in the recurrence after electro-surgery therapy.

References

- [1] Brentifens MH, Yeung – Yue Ka, Lee PC, Tyring SK. Human Papillomavirus; A review. *Dermatol Clin* 2002;20: 315-31.
- [2] Drake LA, Ceilley RI, Cornelison RL, Dobes WL, Dorner W, Goltz RW, et al. Guidelines of care of warts. *Human Papillomavirus. J Am Acad Dermatol* 1995; 32:98-103.
- [3] Blankenship MI. Physical modalities – electro-surgery, electrocautery and electrolysis. *Int J Dermatol* 1979; 18: 443-52.
- [4] Sterling JC, Handfield-Jones S, Hudson PM. British Association of Dermatologists. Guidelines for the management of cutaneous warts. *Br J Dermatol* 2001; 144:4-11.
- [5] Chang TSC, Goh BK, Chong WS, Chan YC, Giam YC. Viral warts in children seen at a tertiary referral centre. *Ann Acad Med Singapore*. 2004; 33: 53-56
- [6] Berman A. Failure of flat warts to recur in electro-surgically altered skin. *Arch Dermatol*. 1978;114 (12) :1797-9.
- [7] Pezeshkpoor F, Banihashemi M, Yazdanpanash MJ et al. Comparative study of topical 80% trichloroacetic with 35% trichloroacetic acid in the treatment of the

common wart. J Drugs Dermatol.2012 Nov;11 (11):e66-9

Table 1: Response to Electrosurgery: In electrosurgery group 28 patients (93%) had “complete clearance”. 2 patients had “recurrence”

Result	No. of patients	Percentage
Complete clearance	28	93%
Partial clearance	-	-
No improvement	-	-
Recurrence	2	6.6%

Table 2: Response to TCA 50%: In present study, out of 30 patients only 7 patients had “complete clearance” and 2 had “recurrence”. In 19 patients there was “no improvement” and 2 had “partial clearance”

Result	No. of patients	Percentage
Complete clearance	7	23.3%
Partial clearance	2	6.6%
No improvement	18	60%
Recurrence	3	10%

ELECTROSURGERY



Before



After

Figure 1: Electrocautery before and after

TRICHLOROACETIC ACID

Before



After



Figure 2: Before and after TCA 50%